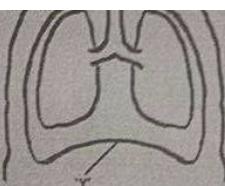


University of Health Sciences, Lahore



Entrance Test 2017 For F.Sc and Non F. Sc Student

CHEMISTRY



- A) Pleura.
B) Diaphragm.

- C) Chest cavity.
D) Intercostal muscles.

Q.88 Which one of the following is a respiratory disorder that is related to malnutrition?
A) Cancer.
B) Asthma.
C) Emphysema.
D) Tuberculosis.

CHEMISTRY

Q.89 In NO_3^- the oxidation number of N is:
A) +5.
B) +2.
C) +3.
D) -3.

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Q.90 The E' value of standard copper half cell is +0.34 V, measured when it is connected with SHE i.e. Standard Hydrogen Electrode. In this case the half reaction taking place at SHE is:

A) $2H_{(aq)} + 2e^- \rightarrow H_{(aq)}^+$ C) $2H_{(aq)}^+ + 2e^- \rightarrow 2H_{(aq)}$
 B) $H_{(aq)} \rightarrow 2H_{(aq)}^+ + 2e^-$ D) $H_{(aq)} \rightarrow 2H_{(aq)} + 2e^-$

Q.91 Consider the following reversible reaction:

$$\text{CH}_3-\overset{\text{O}}{\underset{\text{O}}{\text{C}}} \text{H}_2-\text{OH} + \text{CH}_3-\overset{\text{O}}{\underset{\text{O}}{\text{C}}} \text{H}_2-\text{O}-\text{H} \rightleftharpoons \text{CH}_3-\overset{\text{O}}{\underset{\text{O}}{\text{C}}} \text{H}_2-\text{O}-\overset{\text{O}}{\underset{\text{O}}{\text{C}}} \text{H}_3 + \text{H}_2\text{O}$$

Initial Concentration
 $(\text{CH}_3\text{COOC}_2)^- = 1 \text{ mol}$ $(\text{CH}_3\text{COH}_2^+) = 0 \text{ mol}$
 $(\text{CH}_3\text{COOH}) = 1 \text{ mol}$ $(\text{H}_2\text{O}) = 0 \text{ mol}$

Equilibrium Concentration
 $(\text{CH}_3\text{COOC}_2)^- = 0.333 \text{ mol}$ $(\text{CH}_3\text{COH}_2^+) = 0.666 \text{ mol}$
 $(\text{CH}_3\text{COOH}) = 0.333 \text{ mol}$ $(\text{H}_2\text{O}) = 0.666 \text{ mol}$

$K_c = 4 \text{ at } 100^\circ\text{C}$
 What are new equilibrium concentrations of all species if 1 mole of each of $\text{CH}_3\text{COH}_2^+$ and CH_3COOH are added to this equilibrium mixture? (Apply Le-Chatelier's Principle) (Temperature remained same)
 $(K_c \text{ remains constant})$

A) $(\text{CH}_3\text{COOH}) = 0.333 \text{ mol}$ $(\text{CH}_3\text{COOC}_2^+) = 1.666 \text{ mol}$
 $(\text{CH}_3\text{COH}_2^+) = 1.333 \text{ mol}$ $(\text{H}_2\text{O}) = 0.666 \text{ mol}$

B) $(\text{CH}_3\text{COOH}) = 1.333 \text{ mol}$ $(\text{CH}_3\text{COOC}_2^+) = 0.666 \text{ mol}$
 $(\text{CH}_3\text{COH}_2^+) = 0.333 \text{ mol}$ $(\text{H}_2\text{O}) = 1.666 \text{ mol}$

C) $(\text{CH}_3\text{COOH}) = 0.666 \text{ mol}$ $(\text{CH}_3\text{COOC}_2^+) = 1.333 \text{ mol}$
 $(\text{CH}_3\text{COH}_2^+) = 0.666 \text{ mol}$ $(\text{H}_2\text{O}) = 1.333 \text{ mol}$

D) $(\text{CH}_3\text{COH}_2^+) = 0.333 \text{ mol}$ $(\text{CH}_3\text{COOC}_2^+) = 1.333 \text{ mol}$
 $(\text{CH}_3\text{COOH}) = 0.333 \text{ mol}$ $(\text{H}_2\text{O}) = 1.333 \text{ mol}$

Q.92 For which of the following equilibrium reaction, K_c has no units?

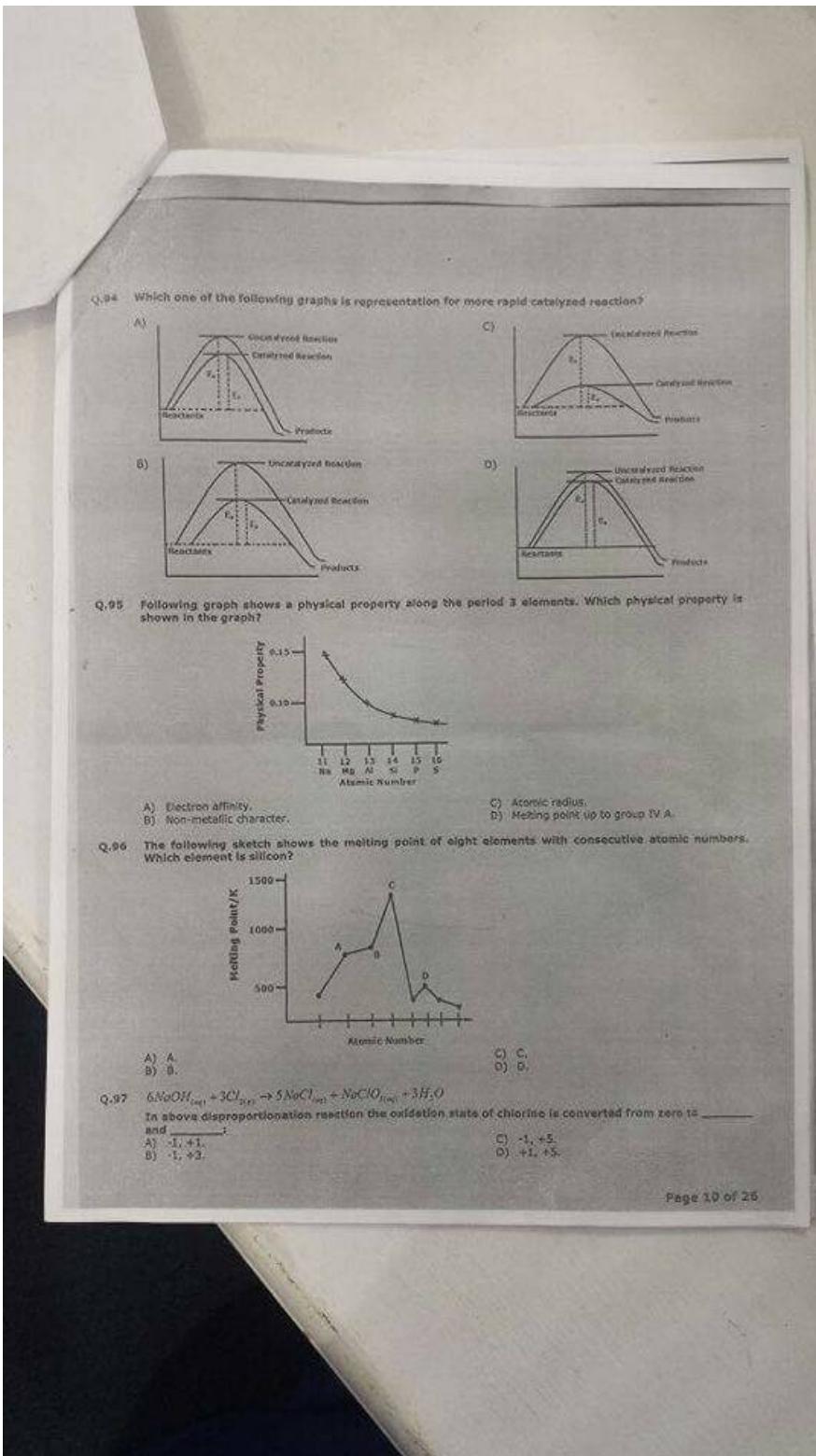
A) $N_{(g)} + 3H_{(g)} \rightleftharpoons 2NH_{(g)}$ C) $\text{CO}_{(g)} + \text{H}_2\text{O}_{(g)} \rightleftharpoons \text{CO}_{(g)} + \text{H}_{(g)}$
 B) $SO_{(g)} + 2O_{(g)} \rightleftharpoons 2SO_{(g)}$ D) $2NO_{(g)} + O_{(g)} \rightleftharpoons 2NO_2_{(g)}$

Q.93 Choose the type of catalyst in the following reaction:

$$2\text{SO}_{(g)} \xrightleftharpoons{NO_{(g)}} 2\text{SO}_{(g)}$$

A) Homogeneous catalysis
 B) Heterogeneous catalysis
 C) Biological catalysis
 D) Gas catalysis

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Q.97 Which noble gas is alpha emitter?
A) Xenon.
B) Radon.
C) Krypton.
D) Argon.

Q.98 Scandium has Atomic Number 21; which one will be its electronic configuration?
A) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^1$.
B) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^1$.
C) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 4p^1$.
D) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 4p^2$.

Q.99 Violet color of $[Ti(N_3O)_6]^{+}$ ion is due to the
A) Central metal ion.
B) Complex ion.
C) Water molecule.
D) Outer anion.

Q.100 Nitrogen gas reacts under _____ condition.
A) Standard.
B) Normal.
C) Cool.
D) Harsh.

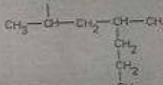
Q.101 Liquid ammonia has become an important fertilizer for direct application to soil. It contains _____ nitrogen.
A) 46%.
B) 82%.
C) 14%.
D) 17%.

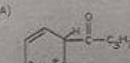
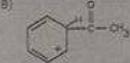
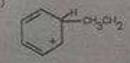
Q.102 SO_2 formed in Contact Process is absorbed in _____ % H_2SO_4 .
A) 90.
B) 80.
C) 98.
D) 89.

Q.103 The balanced chemical equation to manufacture ammonia gas by Haber's Process is:
A) $N_{(g)} + 3H_{(g)} \rightleftharpoons 2NH_{(g)}$
B) $N_{(g)} + H_{(g)} \rightleftharpoons NH_{(g)}$
C) $3N_{(g)} + H_{(g)} \rightleftharpoons NH_{(g)}$
D) $N_{(g)} + 3H_{(g)} \longrightarrow 2NH_{(g)}$

Q.104 Which one of the followings is used as typical catalyst for catalytic cracking?
A) Mixture of SiO_2 and Ni .
B) Mixture of Pt and Cu .
C) Mixture of Fe and MgO .
D) Mixture of SiO_2 and Al_2O_3 .

Q.105 The type of structural isomerism which arises due to the difference in the nature of carbon chain or carbon skeleton is:
A) Chain isomerism.
B) Position isomerism.
C) Cis-Trans isomerism.
D) Optical isomerism.

Q.106 Which one of the followings is the best name according to IUPAC system for the formula given below?

A) 4-methyl-6-chloro heptane.
B) 2-chloro-4-methyl heptane.
C) 2-Chloro-4-n-propyl hexane.
D) 2-Chloro-4-n-propyl pentane.

Q.107 Intermediate product formed when propanoyl chloride reacts with benzene is:
A) 
B) 
C) 
D) 

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Q.109 Which of the following species are 3,5(meta) directing groups when second group is introduced into the benzene ring.

Ia = NH_2 II = $-\text{CRO}$ III = $-\text{COOH}$ IV = $-\text{CH}_3$
 A) I, II and IV.
 B) II and III.
 C) I and IV.
 D) I, II and IV.

Q.110 When benzene reacts with Acetyl Chloride (CH_3COCl) in the presence of AlCl_3 , acetophenone is formed. The electrophile in this reaction will be:

A) CH_3CO^+ .
 B) ACl_3 .
 C) C_6H_5^+ .
 D) CH_3COCl .

Q.111 The reaction of benzene with bromine in the presence of FeBr_3 follows the mechanism of _____ reaction.

A) Electrophilic addition.
 B) Nucleophilic substitution.
 C) Electrophilic substitution.
 D) Nucleophilic addition.

Q.112 Which one of the following is Halothane?

A) C)
 B) D)

Q.113 The non-stick lining of pans is _____.
 A) Difluoroethene.
 B) Chlороfluoroethene.
 C) Chloroethene.
 D) Tetrafluoroethene.

Q.114 In elimination reaction, alcoholic KOH is used. OH^- in this case will act as:

A) Electrophile.
 B) Base.
 C) Leaving group.
 D) Acid.

Q.115 During the SnI_4 reaction, the fast reaction involves:
 A) Breakage of covalent bond.
 B) Formation of carbocation.
 C) Transition state.
 D) Attack of nucleophile.

Q.116 Alcohol reacts slowly with Na-metal as compared to water because it has low concentration of H^+ ions which suggests it is:
 A) Less acidic than water.
 B) More acidic than phenol.
 C) More acidic than phenol.
 D) Less acidic than water.

Q.117 $\text{CH}_3-\text{CH}_2-\text{OH} + \text{PCl}_5 \rightarrow \text{CH}_3-\text{CH}_2-\text{Cl} + \text{POCl}_3 + \text{HCl}$, formation of HCl is test for the presence of _____ in a compound.

A) Alkyl group.
 B) Hydroxyl group.
 C) Saturated alkyl group.
 D) Acid H^+ ion.

Q.118 $\text{C}_2\text{H}_5\text{OH} + \text{CH}_3-\text{COOH} \xrightleftharpoons{\text{H}_2\text{O}_2}$, what will be the exact product?
 A) Diethyl ether.
 B) Methyl propyl ether.
 C) Ethyl acetate.
 D) Butyl Alcohol.

Q.119 $\text{C}_2\text{H}_5-\text{SO}_3\text{H} \xrightarrow{\text{heat}}$ $\text{C}_2\text{H}_5-\text{OII} + \text{H}_2\text{SO}_4$, choose the correct type for this reaction from the following?

A) Reduction.
 B) Oxidation.
 C) Hydrosylation.
 D) Hydrolysis.

Q.120 ethanol reacts with HCN to form cyanohydrin. It is an example of:
 A) Nucleophilic addition.
 B) Electrophilic addition.
 C) Electrophilic substitution.
 D) Nucleophilic substitution.

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The reaction of aldehydes and ketones with ammonia derivative $\text{C}_6\text{H}_5\text{NH}_2$ to form compounds containing the group $\text{C}_6\text{H}_5\text{—NHC}_6\text{H}_5$ and water is known as _____ reaction.

A) Nucleophilic Addition.
B) Nucleophilic Substitution.
C) Electrophilic Addition.
D) Addition-Elimination.

Q.122 Which one of the following compounds will give Iodoform test on treatment with aqueous iodine?
A) 3-pentanone.
B) Propanone.
C) Propenal.
D) Butanal.

Q.123 What will be the product of the reaction given below?

$\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_2\text{H}_5\text{—C=O} \\ | \\ \text{C}_2\text{H}_5 \end{array} + \text{HCN/HCl} \xrightarrow{\quad} ?$

A) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_2\text{H}_5\text{—C(OH)(CN)} \\ | \\ \text{C}_2\text{H}_5 \end{array}$
B) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_2\text{H}_5\text{—C(OH)(CN)} \\ | \\ \text{H} \end{array}$
C) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_2\text{H}_5\text{—C(OH)(CN)} \\ | \\ \text{CH}_3 \end{array}$
D) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_2\text{H}_5\text{—C(OH)(NH}_2\text{)} \\ | \\ \text{CH}_3 \end{array}$

Q.124 In the reaction, '?' represents which one of the following products?

$\text{Primary Alcohol} + [\text{O}] \xrightarrow[\text{H}_2\text{SO}_4]{\text{K}_2\text{Cr}_2\text{O}_7} ? \xrightarrow{[\text{O}]} \text{Carboxylic Acid}$

A) Ketone.
B) Aldehyde.
C) Formic acid.
D) Ether.

Q.125 Compounds having $—\text{C}\equiv\text{N}$ group are called:
A) Cyano compounds.
B) Nitro compounds.
C) Carbon-nitrogen molecules.
D) Nitriles.

Q.126 Select the correct acidic strength order of chlorosubstituted acids:
A) $\text{CH}_3\text{COOH} > \text{ClCH}_2\text{COOH} > \text{BrCH}_2\text{COOH} > \text{ICh}_2\text{COOH}$
B) $\text{CH}_3\text{COOH} > \text{ClCH}_2\text{COOH} > \text{Cl}_2\text{CHCOOH} > \text{ClCH}_2\text{COOH}$
C) $\text{Cl}_2\text{CHCOOH} > \text{ClCH}_2\text{COOH} > \text{ClCH}_2\text{COOH} > \text{CH}_3\text{COOH}$
D) $\text{Cl}_2\text{CHCOOH} > \text{CH}_3\text{COOH} > \text{ClCH}_2\text{COOH} > \text{OCH}_3\text{COOH}$

Q.127 The phenoxide ion is more stable than ethoxide ion as:
A) Lone pair on oxygen atom overlaps with the delocalized π -bonding system in benzene.
B) Oxygen atom is directly bonded with benzene ring in phenoxide ion.
C) The negative charge is localized on oxygen atom of phenoxide ion.
D) The negative charge is delocalized on oxygen atom of ethoxide ion.

Q.128 Acidic character of amino acid is due to:
A) $-\text{NH}_2$.
B) $-\text{N}^+ \text{H}_3$.
C) $-\text{COOH}$.
D) $-\text{COO}^-$.

Q.129 IUPAC name of alanine is:
A) 2-Aminopropanoic acid.
B) 2-Aminopropanoic acid.
C) 2-Aminobutane-1,4-dioic acid.
D) 2-Aminobutanoic acid.

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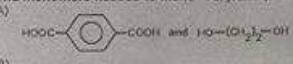
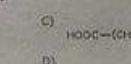
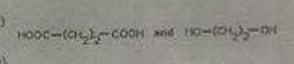
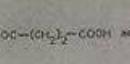
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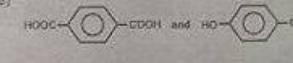
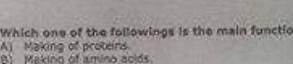
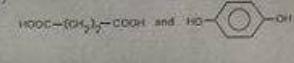
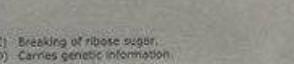
Q.130. The amide linkage, present in Nylon-6,6, has the structure:

A)  C) 

B)  D) 

Q.131. The monomers needed to make "Terylene", i.e. a polyester are:

A)  and  C)  and 

B)  and  D)  and 

Q.132. Which one of the followings is the main function of DNA?

A) Making of proteins. C) Breaking of ribose sugar.

B) Making of amino acids. D) Carries genetic information.

Q.133. _____ is the major source of acid deposition in the atmosphere.

A) SiO_2 . C) SO_2 .

B) CO_2 . D) Al_2O_3 .

Q.134. The energy from the ultraviolet light is sufficient to break the _____ bond in CCl_2F_2 .

A) C-O. C) C-F.

B) C-C. D) C=C.

Q.135. There are almost 200 million people alive in Pakistan. If you were to distribute Rupees 100 to each Pakistani in the form of 5 rupee coin, how many moles of coins you must have?

A) 6.57×10^4 . C) 6.57×10^4 .

B) 1.5×10^5 . D) 1.5×10^5 .

Q.136. A researcher has prepared a sample of 1-Bromopropane from 10 g of 1-Propano. After purification he had made 12 g of product. Which of the following is percentage yield?

A) 60%. C) 90%.

B) 50%. D) 50%.

Q.137. Which one of the followings has same number of molecules as present in 11 g of CO_2 ?

A) 4 g of O_2 . C) 4 g of O.

B) 4.5 g of H_2O . D) 1 mole of NaCl .

Q.138. An organic sample consisting of carbon, hydrogen and oxygen was subjected to combustion analysis. 0.5439 g of this compound gave 1.029 g carbon dioxide, 0.6369 g of water vapors. The empirical formula of this compound is:

A) CH_2O . C) $\text{C}_2\text{H}_4\text{O}$.

B) $\text{C}_2\text{H}_3\text{O}_2$. D) $\text{C}_2\text{H}_6\text{O}$.

Q.139. 20 g of N_2 will at STP occupy the volume of:

A) 22.41 dm³. C) 44.82 cm³.

B) 44.82 dm³. D) 2.241 dm³.

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Q.130 The amide linkage, present in Nylon-6,6, has the structure:

A) $\text{---NH}_2\text{---C=O}$ C) ---NH---C=O
B) ---C=O---O--- D) ---NH---O---C=O

Q.131 The monomers needed to make "Terylene", i.e. a polyester are:

A) HOOC-C₆H₄-COOH and HO-(CH₂)₂-OH C) HOOC-(CH₂)₂-COOH and HO-(CH₂)₂-OH
B) HOOC-C₆H₄-COOH and HO-C₆H₄-OH D) HOOC-(CH₂)₂-COOH and HO-C₆H₄-OH

Q.132 Which one of the followings is the main function of DNA?

A) Making of proteins. C) Breaking of ribose sugar.
B) Making of amino acids. D) Carries genetic information.

Q.133 _____ is the major source of acid deposition in the atmosphere.

A) SiO₂. C) SO₂.
B) CO₂. D) Al₂O₃.

Q.134 The energy from the ultraviolet light is sufficient to break the _____ bond in CCl₄F₂.

A) Cl-O. C) Cl-F.
B) C-O. D) C-F.

Q.135 There are almost 200 million people alive in Pakistan. If you were to distribute Rupees 100 to each Pakistani in the form of 5 rupee coin, how many moles of coins you must have?

A) 6.67×10^{14} . C) 6.67×10^{14} .
B) 1.5×10^{14} . D) 1.5×10^{14} .

Q.136 A researcher has prepared a sample of 1-Bromopropane from 10 g of 1-Propanol. After purification he had made 12 g of product. Which of the following is percentage yield?

A) 60%. C) 90%.
B) 58%. D) 50%.

Q.137 Which one of the followings has same number of molecules as present in 11 g of CO₂?

A) 4 g of O₂. C) 4 g of O.
B) 4.5 g of H₂O. D) ½ moles of NaCl.

Q.138 An organic sample consisting of carbon, hydrogen and oxygen was subjected to combustion analysis. 0.5439 g of this compound gave 1.039 g carbon dioxide, 0.6369 g of water vapors. The empirical formula of this compound is:

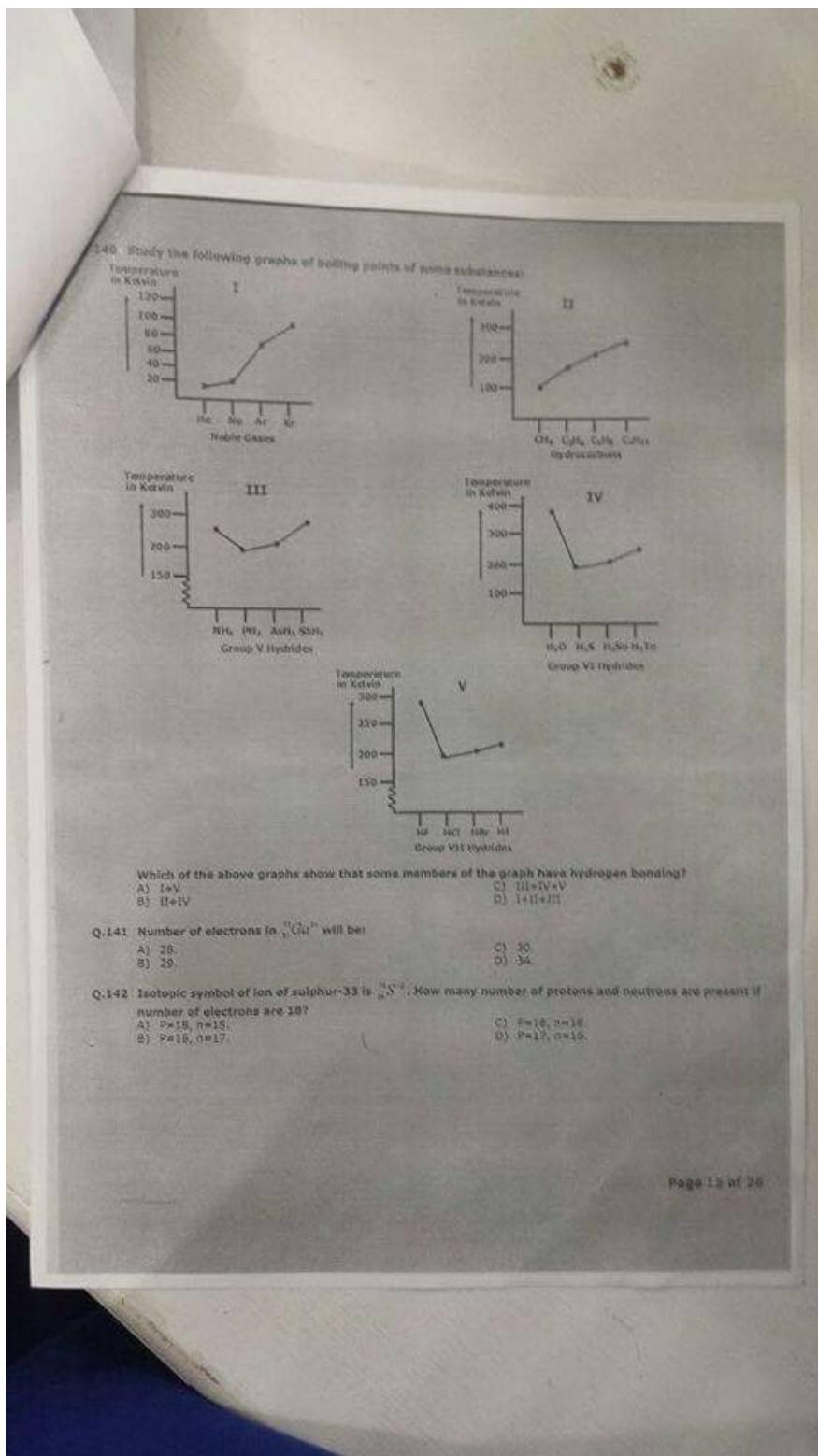
A) CH₂O. C) C₂H₄O.
B) C₂H₂O₂. D) CH₄O.

Q.139 28 g of N₂ will at STP occupy the volume of:

A) 22.41 dm³. C) 44.82 cm³.
B) 44.82 dm³. D) 2.241 dm³.

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